

SCOPE OF CLAIMS

1. An electronic still camera comprising:
an imaging device for obtaining electronic image data from an
5 optical image of a subject;
memory means for recording said image data therein;
a printing device for printing an image on an instant film containing
a processing solution therein, said printing device comprising a printing head
which is elongated in a main scan direction, a head moving mechanism for
10 moving said printing head in a sub scan direction perpendicular to the main
scan direction, and a head driver for driving said printing head on the basis
of one frame of image data read out from said memory means in a line
sequential fashion to expose said instant film line by line while said printing
head is moved in the sub scan direction; and
15 developing rollers for advancing said instant film after exposure out
of a camera body while developing said processing solution inside said
exposed instant film.
2. An electronic still camera according to claim 1, further
20 comprising:
a memory storing predetermined image data;
a device for reading out appropriate image data from said memory
and composing said appropriate image data with said image data of a subject
image; and
25 a display device for displaying said subject image or a composite
image on the basis of said subject image data or said composed image data

respectively, wherein said printing device may print said composite image on the basis of said composed image data.

3. An electronic still camera according to claim 1, further
5 comprising a film exit formed through a top face of said camera body, through which said exposed instant film is advanced out in a direction parallel to the sub scan direction.

4. An electronic still camera according to claim 1, further
10 comprising external terminals for communicating image data with external apparatuses, including external printers, computers and memories.

5. An electronic still camera according to claim 1, wherein said
15 printing head sequentially emits red, green and blue light beams such that a full-color image is printed in a three color frame sequential fashion.

6. An electronic still camera according to claim 1, wherein said
printing head simultaneously emits red, green and blue light beams such that a full-color image is printed while said printing head makes a single
20 movement in the sub scan direction.

7. An electronic still camera according to claim 5, wherein said
printing head comprises a fluorescent lamp, a red pass filter, a green-pass filter, a blue pass filter, a filter switching device for positioning one of said
25 three filters in a light path of said fluorescent lamp, an LCD array arranged in a row in the light path of said fluorescent lamp, and an optical system for projecting light from said fluorescent lamp onto said instant film.

8. An electronic still camera according to claim 5, wherein said printing head comprises a fluorescent light source array arranged in a row, a red pass filter, a green-pass filter, a blue pass filter, a filter switching device for positioning one of said three filters in a light path of said fluorescent light source array, and an optical system for projecting light from said fluorescent light source onto said instant film.

9. An electronic still camera according to claim 5, wherein said printing head comprises an LED array emitting red, blue and green light beams, an LCD array arranged in a row in a light path of said LED array, and an optical system for projecting light from said LED array onto said instant film.

10. An electronic still camera according to claim 6, wherein said printing head comprises an LED array arranged in three rows, emitting red, blue and green light beams respectively, an LCD array arranged in three rows in correspondence with said LED array, and an optical system for projecting light from said LED array onto said instant film.

11. An electronic still camera according to claim 1, wherein said electronic still camera may be repeatedly loaded with an instant film pack containing a plurality of said instant films.

12. An electronic still camera comprising:
an imaging device for obtaining electronic image data from an optical image of a subject;
memory means for recording said image data therein;

a printing device for printing an image on an instant film containing a processing solution therein, said printing device comprising a printing head which is elongated in a main scan direction and simultaneously emits three color light beams of red, green and blue, a film advancing device for
5 advancing said instant film in a sub scan direction perpendicular to the main scan direction, and a head driver for driving said printing head to expose said instant film line by line on the basis of image data of one frame read out line by line from said memory means while said instant film is advanced in the sub scan direction; and

10 developing rollers included in said film advancing device, for advancing said instant film after exposure out of a camera body while developing said processing solution inside said exposed instant film.

13. An electronic still camera according to claim 12, further
15 comprising a speed detection device for detecting advancing speed of said instant film, and a device for controlling timing of light emission of said printing head in accordance with the film advancing speed so as to reduce damage on the printed image that may be caused by fluctuations in the advancing speed.

20 14. An electronic still camera according to claim 12, further comprising:

a memory storing predetermined image data;
a device for reading out appropriate image data from said memory
25 and composing said appropriate image data with said image data of a subject image; and

a display device for displaying said subject image or a composite image on the basis of said subject image data or said composed image data respectively, wherein said printing device may print said composite image on the basis of said composed image data.

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15. An electronic still camera according to claim 12, further comprising external terminals for communicating image data with external apparatuses, including external printers, computers and memories.

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16. An electronic still camera according to claim 12, wherein said electronic still camera may be repeatedly loaded with an instant film pack containing a plurality of said instant films.

17. An electronic still camera comprising:

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an imaging and recording device for displaying a moving image of a subject on a display panel based on an image signal picked up through an image sensor in a real time fashion, obtaining digital image data from said image signal and recording said image data frame by frame in memory means in response to a shutter release signal;

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a display device for displaying a still image on said display panel on the basis of image data read out from said memory means;

a printing device for printing an image on a photosensitive recording medium by driving a printing head on the basis of image data read out from said memory means; and

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a mode selection device for selecting and switching one of said imaging and recording device, said display device and said printing device to an active condition; wherein immediately after a power switch is turned on,

said electronic still camera is automatically set to an imaging mode where said imaging and recording device is active.

18. An electronic still camera according to claim 17, wherein when
5 a print mode is selected through said mode selection device, said imaging mode, or a display mode where said display device is active, is immediately terminated, and said printing device is made ready for printing, whereas said display panel displays a still image on the basis of image data recorded last in said memory means, and in response to a print execution signal said
10 printing device prints the image that is displayed on the display panel.

19. An electronic still camera according to claim 18, wherein said display panel stops displaying any image upon said print execution signal, and all signals input through external operation are canceled until said
15 printing device completes making at least one sheet of print.

20. An electronic still camera according to claim 17, 18 or 19, wherein said photosensitive recording medium is an instant film containing a processing solution therein, and said electronic still camera further
20 comprises developing rollers for advancing said instant film out of a camera body while developing said processing solution in said instant film after an image is recorded on said instant film by said printing device.

21. An instant printer for printing an image on an instant film
25 containing a processing solution therein by exposing said instant film and developing said processing solution in said exposed instant film, the instant printer comprising:

a film advancing device for advancing said instant film after exposure to outside, said film advancing device including developing rollers for developing the processing solution in said exposed instant film as being passed therethrough;

5 a printing head located near and before said developing rollers in the film advancing direction, said printing head having an array of light emitting elements arranged in a main scan direction perpendicular to the film advancing direction; and

a head driver for driving said light emitting elements in accordance
10 with digital image data fed to said head driver in a line sequential fashion, synchronously with said film advancing device advancing said instant film, thereby to expose said instant film line by line.

22. An instant printer according to claim 21, further comprising a
15 speed detection device for detecting advancing speed of said instant film, and a device for controlling timing of light emission of said printing head in accordance with the film advancing speed so as to reduce damage on the printed image that may be caused by fluctuations in the advancing speed.

20 23. An instant printer according to claim 22, wherein said instant printer is provided with a speed detection track having marks arranged at regular intervals along the film advancing direction, and said speed detection device detects the film advancing speed with reference to said marks of said speed detection track.

25 24. An instant printer according to claim 22, wherein said light emitting elements are arranged in three rows for emitting three color light

beams respectively, and are driven simultaneously in accordance with image data of three colors of one line.

25. An instant printer according to claim 24, wherein said printing
5 head further comprises an optical system for projecting the three color light beams from the three rows of light emitting elements into a line on said instant film.

26. An instant printer according to claim 22, further comprising an
10 external terminal for inputting image data from external apparatuses.

27. An instant printer according to one of claims 21 to 26, wherein
said instant printer is integrally or removably mounted to an electronic still
camera having an imaging device for capturing electronic image data from an
15 optical image of a subject, and memory means for recording said image data therein.

28. An instant film containing a processing solution therein which
is developed over a photosensitive surface of said instant film while said
20 instant film is advanced through developing rollers, said instant film comprising a speed detection track extending along a developing direction of said processing solution, said speed detection track having marks arranged at regular intervals along said track, allowing to detect an advancing speed of said instant film with reference to said marks.